

REMARKS

Applicant has canceled claims 13-20 without prejudice as being drawn to a non-elected invention.

Applicant has amended claims 1, 5, and 7-11.

Support for amending claim 1 is provided at lines 26-28 on page 7 of the specification, at lines 28-29 on page 9 of the specification, and at lines 27-28 on page 6 of the specification.

Support for amending claim 5 is provided at lines 23-26 on page 8 of the specification.

Support for amending claim 7 is provided at lines 22-24 on page 6 of the specification.

Support for amending claim 8 is provided at lines 24-25 on page 7 of the specification.

Support for amending claims 9-10 is provided at lines 12-13 on page 6 of the specification.

Support for amending claim 11 is provided at line 26-27 on page 9 of the specification.

Claim Rejections 35 U.S.C. § 102 (e)

The Examiner has rejected claims 1-5 and 12 under 35 U.S.C. §102 (e) as being unpatentable by Hijzen et al. (US 6,368,921). Applicant believes that the Examiner intended to say "anticipated".

Applicant respectfully disagrees with the Examiner. In one embodiment of Applicant's claimed invention, claim 1, as amended, claims a structure (7a) including: a substrate (10); a layer of material (40) located over the substrate; a first

pair of features (16a) located in the substrate and left exposed by an etch to remove an overlying portion of the layer of material, the first pair of features being equidistant from a first centerline (17a); a second pair of features (16b) located in the substrate and left embedded below the layer of material, the second pair of features being equidistant from a second centerline (35a), the second pair of features and the first pair of features being coplanar; and a third pair of features (46a) located in the layer of material, the third pair of features being equidistant from a third centerline (55a), where deviation among the first, second, and third centerlines is a measurement of overlay. See Figure 3 (b).

In another embodiment of Applicant's claimed invention, claim 1, as amended, claims a structure (107a) including: a substrate (110); a layer of material (140) located over the substrate; a first pair of features (116a) located in the substrate and left exposed by an etch to remove an overlying portion of the layer of material, the first pair of features being equidistant from a first centerline (117a); a second pair of features (116b) located in the substrate and left embedded below the layer of material, the second pair of features being equidistant from a second centerline (135a); and a third pair of features (146a) located in the layer of material, the third pair of features being equidistant from a third centerline (155a), where deviation among the first, second, and third centerlines is a measurement of overlay. See Figure 4 (b).

In contrast, Hijzen et al. does not teach a structure where a first pair of features are left exposed by an etch to remove an overlying portion of a layer of material, where a second pair of features are left embedded below the layer of material, and the first pair of features and the second pair of features are coplanar. See Figure 9.

Consequently, the reference of Hijzen et al. cited by the Examiner does not teach each and every element of claim 1, as amended, of Applicant's claimed invention and, thus, Hijzen et al. does not anticipate claim 1 of Applicant's claimed invention.

Claims 2-5 and 12 are dependent on claim 1, as amended. Consequently, the reference of Hijzen et al. cited by the Examiner does not teach each and every element of claims 2-5 and 12 of Applicant's claimed invention and, thus, Hijzen et al. also does not anticipate claims 2-5 and 12 of Applicant's claimed invention.

In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 1-5 and 12 under 35 U.S.C. §102 (e).

Claim Rejections 35 U.S.C. § 102 (b)

The Examiner has rejected claims 1-5 and 12 under 35 U.S.C. §102 (b) as being unpatentable by Morikawa (US 5,308,682). Applicant believes that the Examiner intended to say "anticipated".

Applicant respectfully disagrees with the Examiner. In one embodiment of Applicant's claimed invention, claim 1, as amended, claims a structure (7a) including: a substrate (10); a layer of material (40) located over the substrate; a first pair of features (16a) located in the substrate and left exposed by an etch to remove an overlying portion of the layer of material, the first pair of features being equidistant from a first centerline (17a); a second pair of features (16b) located in the substrate and left embedded below the layer of material, the second pair of features being equidistant from a second centerline (35a), the second pair of features and the first pair of features being coplanar; and a third pair of features (46a) located in the layer of material, the third pair of features being equidistant from a third centerline (55a), where deviation among the first, second, and third centerlines is a measurement of overlay. See Figure 3 (b).

In another embodiment of Applicant's claimed invention, claim 1, as amended, claims a structure (107a) including: a substrate (110); a layer of material (140) located over the substrate; a first pair of features (116a) located in the substrate and left exposed by an etch to remove an overlying portion of the layer of material,

the first pair of features being equidistant from a first centerline (117a); a second pair of features (116b) located in the substrate and left embedded below the layer of material, the second pair of features being equidistant from a second centerline (135a); and a third pair of features (146a) located in the layer of material, the third pair of features being equidistant from a third centerline (155a), where deviation among the first, second, and third centerlines is a measurement of overlay. See Figure 4 (b).

In contrast, Morikawa does not teach a structure where a first pair of features are left exposed by an etch to remove an overlying portion of a layer of material, where a second pair of features are left embedded below the layer of material, and the first pair of features and the second pair of features are coplanar. See Figure 4c.

Consequently, the reference of Morikawa cited by the Examiner does not teach each and every element of claim 1, as amended, of Applicant's claimed invention and, thus, Morikawa does not anticipate claim 1 of Applicant's claimed invention.

Claims 2-5 and 12 are dependent on claim 1, as amended. Consequently, the reference of Morikawa cited by the Examiner does not teach each and every element of claims 2-5 and 12 of Applicant's claimed invention and, thus, Morikawa also does not anticipate claims 2-5 and 12 of Applicant's claimed invention.

In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 1-5 and 12 under 35 U.S.C. §102 (b).

Claim Rejections 35 U.S.C. § 103 (a)

Claims 6-8

The Examiner has rejected claims 6-8 under 35 U.S.C. §103 (a) as being unpatentable over Hijzen et al. (US 6,368,921) in view of Farrar (US 6,413,827).

Applicant respectfully disagrees with the Examiner. In the opinion of the Examiner, Farrar teaches trenches filled with dielectric material. However, Hijzen et al. does not teach a structure where a first pair of features are left exposed by an etch to remove an overlying portion of a layer of material, where a second pair of features are left embedded below the layer of material, and the first pair of features and the second pair of features are coplanar. See Figure 9. Thus, combination of the trenches filled with dielectric material of Farrar and the structure of Hijzen et al. will still not produce the structure of Applicant's invention as claimed in claims 6-8.

Applicant submits that the two references cited by the Examiner do not teach, suggest, or render obvious the structure of Applicant's invention as claimed in claims 6-8. In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 6-8 under 35 U.S.C. §103 (a).

Claims 9-11

The Examiner has rejected claims 9-11 under 35 U.S.C. §103 (a) as being unpatentable over Morikawa (US 5,308,682) in view of Bostrom (US 3,731,085).

Applicant respectfully disagrees with the Examiner. In the opinion of the Examiner, Bostrom teaches holes filled with opaque material. However, Morikawa does not teach a structure where a first pair of features are left exposed by an etch to remove an overlying portion of a layer of material, where a second pair of features are left embedded below the layer of material, and the first pair of features and the second pair of features are coplanar. See Figure 9. Thus, combination of the holes filled with opaque material of Bostrom and the structure of Morikawa will still not produce the structure of Applicant's invention as claimed in claims 9-11.

Applicant submits that the two references cited by the Examiner do not teach, suggest, or render obvious the structure of Applicant's invention as claimed in claims 9-11. In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 9-11 under 35 U.S.C. §103 (a).

Claims 1-3, 6, and 12

The Examiner has rejected claims 1-3, 6, and 12 under 35 U.S.C. §103 (a) as being unpatentable over what the Examiner considers to be Applicant's admitted prior art (Figures 1-2 and pages 2-4).

Applicant respectfully disagrees with the Examiner. Combination of the structure of Figure 1 and the structure of Figure 2 by one of ordinary skill in the art of semiconductors at the time of the invention will not produce the structure of Figure 3 (b). Combination of the structure of Figure 1 and the structure of Figure 2 by one of ordinary skill in the art of semiconductors at the time of the invention will not produce the structure of Figure 4 (b).

Applicant submits that what the Examiner considers to be Applicant's admitted prior art does not teach, suggest, or render obvious the structure of Applicant's invention as claimed in claims 1-3, 6, and 12.

In view of the foregoing, Applicant respectfully requests the Examiner to withdraw the rejections to claims 1-3, 6, and 12 under 35 U.S.C. §103 (a).

Conclusion

Applicant believes that all claims pending, including amended claims, are now in condition for allowance so such action is earnestly solicited at the earliest possible date.